PROTOTYPE WEB TOOLS FOR THE WESTERN CLIMATE MAPPING INITIATIVE (WestMap)

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http://cefa.dri.edu/Westmap/

WestMap The Western Climate Mapping Initiative
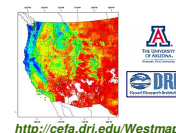
Interactive Data Acquisition and Analysis Interface

The Western Climate Mapping Initiative (WestMap) is developing an interactive web-based gridded climate data user interface focused on the Western United States, along with accompanying stakeholder requested data analysis, assessment, and diagnostics tools.

Three primary interwoven segments of the WestMap interactive user resources

- Data Development & Operations
- Data Access, Visualization & Educational Resources
- Error Assessments, Data Analyses & Diagnostics
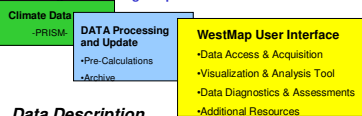
Web Interface Design

The Westmap website is currently based on a mixture of HTML and PHP with plans to incorporate interactivity with Javascript, PostgreSQL, the GD module for PHP and a webGIS server such as ArcIMS.

PHP dynamically generates the HTML pages throughout the site as a means of easily organizing many web pages. PHP also provides the tools to interact with a PostgresSQL database, retrieve PRISM data and and create graphs using the GD module.

In addition to PHP and HTML, Cascading Style Sheets (CSS) are also used to define the layout of the site in a way that is easy to maintain or change.

Javascript will be used to power the navigation tools on the website.

The final piece of the website will be the webGIS components that add a highly detailed method of choosing and viewing the prism data.
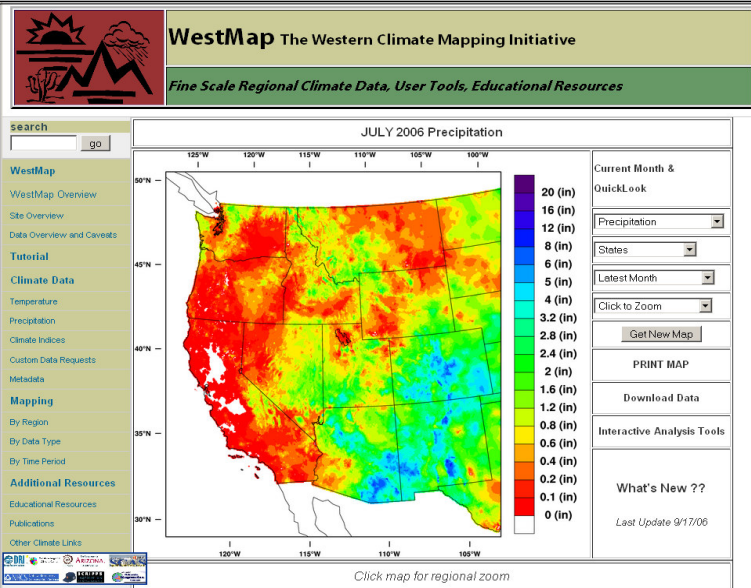
Climate Data -PRISM-

DATA Processing and Update
- Pre-Calculations
- Archive

WestMap User Interface
- Data Access & Acquisition
- Visualization & Analysis Tool
- Data Diagnostics & Assessments
- Additional Resources

Data Description

The 4km monthly PRISM temperature and precipitation data *(The PRISM Group/Spatial Climate Analysis Center/ OSU, C. Daly et al.)* serve as the fine-scale gridded climate data for the WestMap interface. *Current fields:* monthly maximum/minimum/mean temperature and monthly precipitation plus standard anomaly & climatology fields. *Current Region:* Western United States plus prescribed & user selected sub-regions. *Period of Record:* 1895-present.

User caveats in tutorials and metadata
- what the data is and is not
- appropriate use/interpretation
- maps with the lowest overall errors are not necessarily the most accurate

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WestMap The Western Climate Mapping Initiative

Fine Scale Regional Climate Data, User Tools, Educational Resources

search [ ] go

WestMap
- WestMap Overview
- Site Overview
- Data Overview and Caveats

Tutorial

Climate Data
- Temperature
- Precipitation
- Climate Indices
- Custom Data Requests
- Metadata

Mapping
- By Region
- By Data Type
- By Time Period

Additional Resources
- Educational Resources
- Publications
- Other Climate Links

JULY 2006 Precipitation

Click map for regional zoom

Current Month & QuickLook

Precipitation ▾
States ▾
Latest Month ▾
Click to Zoom ▾

Get New Map

PRINT MAP

Download Data

Interactive Analysis Tools

What's New ??

Last Update 9/17/06

Sub-regions PLUS User Defined Regions

Time series are accessible via clickable map or sidebar options for West, State, County, Climate Division, Hydrologic Unit PLUS User- defined regions

West/ County

West/ Climate Divisions

State/ County

State/ Climate Divisions

Maximum Temperature
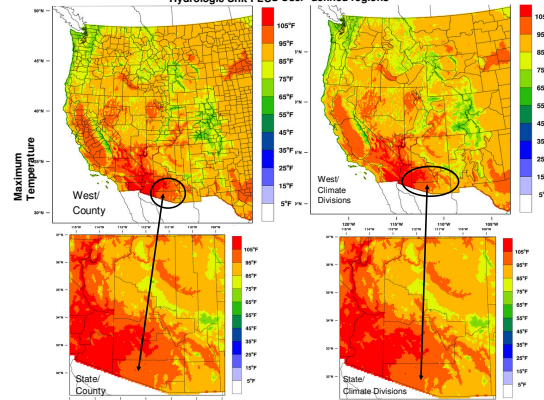
Data Fields PLUS User Defined Fields

Time series of SPATIAL gridded climate data are accessible via clickable map or sidebars

Data fields for July 2006 Max Temperature, Min Temperature, and Precipitation are shown. See Evaluation Section for a time series example.

Max Temperature
Climate Divisions
Climate Divisions

Min Temperature
States
State

Precipitation
Hydro Units
Hydro Units
State
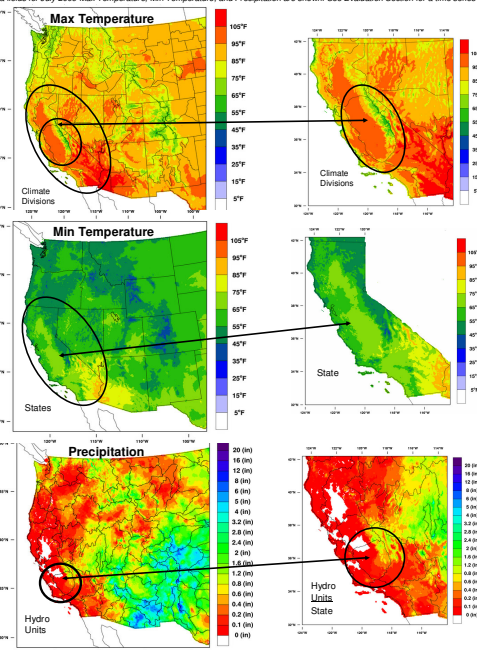
Evaluation tools

- grid data vs. station observation(s): time series and spatial comparisons
- multiple quantitative measures and other expert/lay approaches to understand and communicate error
- Important to understand and correct for sources of error – error is both time and space dependent

Assessment: PRISM vs. Observed
Climate Division Precipitation

DIV 7

Climate Division 1

Climate Division 7
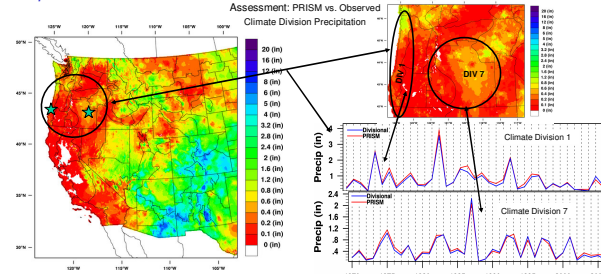
Interactive Analysis Tools

- **QuickLook** and **Climatological fields**
- **Pre-determined fields** and sub-regions
- **User-defined regions** and time periods:
  "Fill-in" Selector (lat/long or names, range of time/specific time), AND...*GIS User Draw Tool*
- **Clickable Maps**
- **Time series of spatial data:**
  Plots/Download---Map(s), Data, or Pixel(s)
- **Composite/Anomaly**
- **Basic statistics**
- **Error assessment**
- **Multiple output options**
- **Metadata**
- **Educational resources**

Composite Fields

Average Precipitation: Strong El Nino/ 7 winters (November to March)
1972-73, 1977-78, 1982-83, 1987-88, 1993-94, 1994-95, 1997-98

Provided by J. Tamerius, UA

Yakima Co., WA
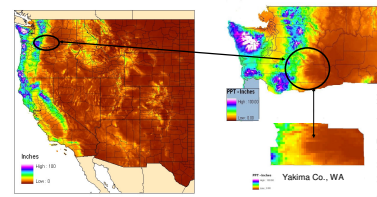
Anomaly Fields

West & CA July 2006
Percent of Normal Precipitation
Courtesy of The PRISM Group

Precipitation Anomaly (% of Normal)

Copyright (c) 2006, PRISM Group, State University
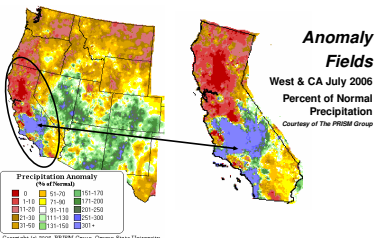
WestMap Web Prototype Status

Web tool prototypes are currently in the development and internal testing phase. Stakeholder testing and related revisions will occur in phases, expanding the test community with each phase: Alpha-Winter 2006, Beta-Spring 2007. Operational release goal: Late Summer 2007. We welcome comments and suggestions from the interested community to guide ongoing development and future operations.

THE UNIVERSITY OF ARIZONA. GEOGRAPHY AND REGIONAL DEVELOPMENT

DRI Desert Research Institute

Western Regional Climate Center

NOAA

The WestMap Consortium

DRI · ARIZONA · SCAS · NRCS · SCRIPPS · Climate Diagnostics Center